



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
FIRST INTERNATIONAL BUILDING  
1201 ELM STREET  
DALLAS, TEXAS 75270

August 12, 1977

Mr. R. G. Dillard  
Manager  
Deer Park Manufacturing  
Complex  
Shell Chemical Company  
P.O. Box 2633  
Deer Park, Texas 77536

Dear Mr. Dillard:

Your application for a 90-day extension of Permit No. 730D008F for continued disposal of biological sludge in the Gulf of Mexico has been the subject of a final determination by this office. We are hereby extending the Shell Chemical Company's special permit with the effective date of February 20, 1976, and a new expiration date of midnight, November 15, 1977. The permit is numbered 730D008F - Special (Ext.).

A new subsection 6 has been added to Special Condition No. 5, Implementation Schedules to indicate Attainment of Operational Level by November 15, 1977.

We wish to take this opportunity to commend you on your expedited work to find an alternative to ocean disposal - you are well ahead of the previous schedule.

Should you have any questions or comments concerning the enclosed permit, please contact Mr. M. E. Chandler at your earliest convenience at (214) 749-2142.

Sincerely yours,

*John C. White*  
John C. White  
Regional Administrator

Enclosure a/s



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FIRST INTERNATIONAL BUILDING

1201 ELM STREET

DALLAS, TEXAS 75270

PERMIT

Permit No. 730D008F - Special (Ext.) (added)

Name of Permittee Shell Chemical Company

Effective Date February 24, 1976

Expiration Date Midnight, November 15, 1977 (Ext.)

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008F - Ext. (added)

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, as amended (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P.O. Box 2633

Deer Park, Texas 77536

and to dump to ocean waters, all in accordance with the following general and special conditions:

#### 4. Means of Transportation

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Western Touring Fleet	GAF-1	1,650 tons
Dixie Carriers, Inc.	Chem 810	1,400 tons
Dixie Carriers, Inc.	Offshore No. 2405	3,450 tons
Dixie Carriers, Inc.	Offshore No. 2402	3,450 tons

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules:

a. Permittee shall continue the plans necessary to provide best practicable treatment technology to the wastes herein described and shall cease dumping wastes in the ocean by a date certain, to be determined by the results of the plans set forth below.

b. Permittee shall continue his research programs on wet oxidation and landfarming, or any other programs in progress or initiated, for an acceptable alternative to ocean disposal. Such programs shall progress in accordance with the following schedule, with interim progress reports as noted:

- (1) Progress Report - August 31, 1976
- (2) Progress Report - November 30, 1976
- (3) Completion of Research Programs or Pilot Studies - January 31, 1977
- (4) Commitment of alternative\* - April 30, 1977
- (5) Begin construction - August 1, 1977
- (6) Attainment of Operational Level - November 15, 1977 (added)

\* The report on the commitment of an alternative shall contain a schedule of completion of facilities for the alternative method, if possible.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1600 PATTERSON  
DALLAS, TEXAS 75201

PERMIT

Permit No. 730D008F - Special  
Name of Permittee Shell Chemical Company  
Effective Date February 24, 1976  
Expiration Date Midnight, August 15, 1977

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008F

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, as amended (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P. O. Box 2633

Deer Park, Texas 77536

and to dump to ocean waters, all in accordance with the following general and special conditions:

General Conditions

1. All transportation and dumping authorized herein shall be consistent with the terms and conditions of this permit.

2. a. Transportation to, and dumping at any location other than that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

b. Transportation and dumping of any material more frequently than or in excess of that identified and authorized by this permit, or dumping of material not authorized by this permit, shall constitute a violation of the terms and conditions of this permit.

c. Permittee shall comply with each and every condition, provision and limitation in this permit and compliance with one or more but less than all conditions, provisions and limitations shall not constitute a ground or grounds of defense in any proceeding against permittee for violation of one or more of such conditions, provisions or limitations.

3. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any term or condition of this permit;

b. Misrepresentation, inaccuracy or failure by the applicant to disclose all relevant facts in the permit application.

c. A change in any condition or material fact upon which this permit is based that requires either a temporary or permanent reduction or elimination of the authorized transportation or dumping including, but not limited to, changes in conditions at the designated dumping site, and newly discovered scientific data relative to the granting of this permit.

d. A determination by the Regional Administrator that the permitted dumping has resulted, is resulting or may result in imminent and substantial harm to human health or welfare or the marine environment.

e. Failure to keep the records and/or to notify appropriate officials of dumping activities.

4. The permittee shall allow the Regional Administrator and/or the U.S. Coast Guard, and/or their authorized representatives, upon the presentation of credentials:

a. To enter into, upon, or through the permittee's premises, vessels or other premises or vessels under the control of permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit; or,

d. To sample any materials discharged or to be discharged.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private or public property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

6. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or, except as authorized by this permit, the undertaking of any work in any navigable waters.

7. Within 48 hours of the completion of each barging operation, permittee shall forward by depositing in the United States mail to the Regional Administrator a report which shall be verified in accordance with the provisions of 18 U.S.C. 1001, by a responsible officer or employee of Permittee, which report shall contain as a minimum, the following:

a. The total amount of material dumped and the amounts, in parts per million and poundage, of each constituent listed in Special Condition No. 1.B. The content of the constituent shall be verified by an analysis of the material to be dumped which shall be performed prior to such dumping operation. Records of such analyses shall be included with such report.

b. A statement of the local time at which each barging operation was commenced, the latitude and longitude of the place where each barging operation was commenced, and the time and the latitude and longitude of the place where each barging operation ceased, as well as the latitude and longitude of the midpoint of the course made good if such barging operation extended over a period of six hours.

c. The time, date and point of actual departure and return for each barging operation.

d. Fathometer records of the entire run during which barging operations or dumping operations were taking place shall be submitted.

8. Permittee shall notify by telegram the U.S. Coast Guard (local Captain of the Port) and the Regional Administrator not later than 12 hours prior to the departure from the permittee's facility of any tug or vessel which is to depart to sea for a barging operation. Included in such notification shall be:

a. A sequential numbering system, starting with number 1, for the barge trips authorized by this permit. All communications relative to each barge trip shall reflect the number designated.

b. A statement of the amount, in tons, of materials to be dumped.

c. A chemical description, as determined by chemical analysis, of the constituents listed in Special Condition No. 1.B., excepting the metals.

d. The names and registry numbers of the tug and barge scheduled for departure, and

e. The estimated time of arrival at the dump site and the estimated time of return to port and the port of return.

Such notice shall be received by the Regional Administrator 12 hours in advance of departure or at such time greater than 12 hours to allow receipt by the Regional Administrator during normal working hours. If permittee anticipates a weekend or holiday dump, he shall notify the Regional Administrator the working day prior to the weekend or holiday and a duty official will be assigned by EPA for receiving the report. In the event the metals analysis exhibits concentrations in violation of the limitations of this permit, permittee shall cause the master of the vessel to not discharge and return to port.

9. Permittee shall cause the master of the vessel to stay in radio contact with the local Captain of the Port (COTP) for all barge movements in accordance with Coast Guard surveillance requirements, and to notify the local COTP when dumping commences.

10. The permittee shall maintain complete records, which shall be available for inspection and copying by the Administrator, the Regional Administrator, or their designees, of:

a. The nature, including a complete description of relevant physical characteristics of material dumped pursuant to the permit.

b. The precise times and locations of dumping.

c. Any information relevant to the assessment of permitted dumping activities on the marine environment or human health or welfare.

11. The permittee shall, at the end of each six-month period, beginning on August 15, 1976, make a report to the Regional Administrator of the following information:

a. Information in the records to be kept pursuant to Paragraph 10 of the General Conditions,

b. A summary of the reports required by Paragraph 7 of the General Conditions,

c. Any additional records or reports required in the Special Conditions of this permit, and

d. An analysis of all elements listed in 227.31(b)(1) of the ocean dumping final regulations and criteria (40 CFR 227.31), excluding those reported under Special Condition 1.B. of herein permit, from a composite sampling from each barging operation.

12. The permittee shall make an additional report in accordance with the requirements of Paragraph 11 of the General Conditions at the expiration of this permit.

13. Reports required by Paragraphs 11 and 12 of the General Conditions shall be received by the Regional Administrator within 30 days following the end of the required reporting period.

14. If the dumping of material which is regulated by this permit is dumped due to emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittee shall make a full report in accordance with the provision of 18 U.S.C. 1001, within 30 days to the Regional Administrator of the emergency and the actions taken.

15. The reporting requirements contained in this permit are in addition to any reporting requirements of any other State or Federal Agency.

16. In the event any portion of the authorized dumping or transporting is done by a person, firm or corporation other than the named permittee, any and all reports required hereunder shall



be jointly executed by both permittee and such other person, firm or corporation in accordance with the provisions of 18 U.S.C. 1001 by an officer or employee of such other person, firm or corporation.

17. The performance of any transportation or dumping authorized by this permit, by any person, firm or corporation other than the named permittee shall not relieve permittee from full responsibility for compliance herewith, nor shall the issuance of this permit to permittee relieve such other person, firm or corporation from responsibility for compliance herewith, nor shall the existence of any such contractual or other relationship between permittee and any other such person, firm or corporation operate to relieve either party from responsibility for compliance with this permit or the Act or both.

18. Terms used in this permit which are defined in Section 3 of the Act shall have the same meaning herein.

#### Special Conditions

##### 1.A.:

The digested biological sludge to be barged is described below as a typical analysis.

pH	6.0 -8.0	
specific gravity	1.01-1.05	
total suspended solids	30,000	ppm
volatile suspended solids	23,000	ppm
total organic carbon	12,000	ppm
organic chlorides	0.8	ppm
mercury	0.011	ppm
cadmium	0.020	ppm
arsenic	0.02	ppm
lead	0.05	ppm
copper	2.8	ppm
zinc	10.0	ppm
selenium	0.20	ppm
vanadium	0.20	ppm
beryllium	<0.004	ppm
chromium	40.0	ppm
nickel	2.5	ppm

##### 1.B.:

In accordance with all other terms and conditions of this permit, the permittee is authorized to transport for dumping and to dump in ocean waters, material which shall not exceed in its physical and chemical characteristics the concentrations and loads listed below:

## Biological Sludge

Composition Constituents	Concentrations (wt/wt) Not to Exceed
Total Suspended Solids, Dry Basis	47,200 ppm
Volatile Suspended Solids, Dry Basis	32,700 ppm
TOC (Total waste)	16,200 ppm
TOC (liquid phase only)	950 ppm
<u>Metals</u>	
Chromium	180. ppm
Cadmium	
Solid Phase	0.6 ppm
Liquid Phase	3.0 ppm
Mercury	
Solid Phase	0.75 ppm
Liquid Phase	1.50 ppm

The character of the material being dumped shall not be altered in its content from the foregoing by the addition of wastewaters from sources other than those identified in the application or otherwise.

2. Amount of Material.

a. The permittee is authorized to transport and dump material described in Special Condition No. 1 an amount not in excess of 187,500 tons under this permit.

b. The permittee is authorized to transport and dump in accordance with the following limitations:

Allowable tons per quarter 50,000

No trip shall be in excess of 3450 tons.

3. Transportation and Barging Activities.

a. The port of departure for the dumping of material described herein is Houston, Texas, or such other port or terminal being used for storage of the accumulated waste subject to the provisions of General Condition No. 8. The permittee is authorized to transport the material described herein from his facility to such port of departure to ocean waters.

b. During loading operations, there shall be no loss of material to any waterway.

c. The permittee is authorized to dump the prescribed wastes in an approved dumping site which is defined in longitude and latitude as follows:

- (1) 27 degrees 12 minutes north latitude
- (2) 27 degrees 28 minutes north latitude
- (3) 94 degrees 28 minutes west longitude
- (5) 94 degrees 44 minutes west longitude

d. Permittee shall navigate around, by a radius of 15 nautical miles, the reefs found at the following coordinates:

- W. Flower Garden: 27 degrees 53 minutes north latitude  
93 degrees 48 minutes west longitude
- E. Flower Garden: 27 degrees 55 minutes north latitude  
93 degrees 36 minutes west longitude

e. Permittee shall also navigate around by a radius of 5 nautical miles the reefs found at the following coordinates:

- Stetson Bank: 28 degrees 10 minutes north latitude  
94 degrees 18 minutes west longitude
- Claypile Bank: 28 degrees 20 minutes north latitude  
94 degrees 09 minutes west longitude

f. The permittee shall regulate the dumping rate so that the material described in Special Condition 1., above, shall be discharged from a barge hereinafter identified at a rate not to exceed 12,000 pounds per minute, while moving at a speed of not less than 5 knots.

g. The permittee shall discharge through an underwater dispersion nozzle.

#### 4. Means of Transportation.

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Western Touring Fleet	GAF-1	1,650 tons
Dixie Carriers, Inc.	Chem 810	1,400 tons
Dixie Carriers, Inc.	Offshore No. 2405	3,450 tons
Dixie Carriers, Inc.	Offshore No. 2402	3,450 tons

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules:

a. Permittee shall continue the plans necessary to provide best practicable treatment technology to the wastes herein described and shall cease dumping wastes in the ocean by a date certain, to be determined by the results of the plans set forth below.

b. Permittee shall continue his research programs on wet oxidation and landfarming, or any other programs in progress or initiated, for an acceptable alternative to ocean disposal. Such programs shall progress in accordance with the following schedule, with interim progress reports as noted:

- (1) Progress Report - August 31, 1976
- (2) Progress Report - November 30, 1976
- (3) Completion of Research  
Programs or Pilot  
Studies - January 31, 1977
- (4) Commitment of  
alternative\* - April 30, 1977
- (5) Begin construction - August 1, 1977

\* The report on the commitment of an alternative shall contain a schedule of completion of facilities for the alternative method, if possible.

c. Permittee shall submit the required report of progress to the Regional Administrator on the date specified for the report. Where an action is required in (b) above by a certain date, a written notice of compliance or non-compliance shall be submitted within 15 days following each elapsed date. Each notice of noncompliance shall include:

(1) a description of the noncompliance and an explanation for the noncompliance;

(2) a description of any actions taken or proposed by the permittee to comply with the requirements; and

(3) a date for the attainment of the requirement plus an assessment of the probability that permittee will meet the next requirement on time.

February 24, 1976  
DATE

George J. Petrucci  
for REGIONAL ADMINISTRATOR  
REGION VI



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1600 PATTERSON  
DALLAS, TEXAS 75201

PERMIT

Permit No. 730D008D - Special  
Name of Permittee Shell Chemical Company  
Effective Date February 20, 1975  
Expiration Date Midnight, February 19, 1976

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008D

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, as amended (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company,

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P. O. Box 2633

Deer Park, Texas 77536

and to dump to ocean waters, all in accordance with the following general and special conditions:

### General Conditions

1. All transportation and dumping authorized herein shall be consistent with the terms and conditions of this permit.

2. a. Transportation to, and dumping at any location other than that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

b. Transportation and dumping of any material more frequently than or in excess of that identified and authorized by this permit, or dumping of material not authorized by this permit, shall constitute a violation of the terms and conditions of this permit.

c. Permittee shall comply with each and every condition, provision and limitation in this permit and compliance with one or more but less than all conditions, provisions and limitations shall not constitute a ground or grounds of defense in any proceeding against permittee for violation of one or more of such conditions, provisions or limitations.

3. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any term or condition of this permit;

b. Misrepresentation, inaccuracy or failure by the applicant to disclose all relevant facts in the permit application.

c. A change in any condition or material fact upon which this permit is based that requires either a temporary or permanent reduction or elimination of the authorized transportation or dumping including, but not limited to, changes in conditions at the designated dumping site, and newly discovered scientific data relative to the granting of this permit.

d. A determination by the Regional Administrator that the permitted dumping has resulted, is resulting or may result in imminent and substantial harm to human health or welfare or the marine environment.

e. Failure to keep the records and/or to notify appropriate officials of dumping activities.

4. The permittee shall allow the Regional Administrator and/or the U.S. Coast Guard, and/or their authorized representatives, upon the presentation of credentials:

a. To enter into, upon, or through the permittee's premises, vessels or other premises or vessels under the control of permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit; or,

d. To sample any materials discharged or to be discharged.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private or public property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

6. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or, except as authorized by this permit, the undertaking of any work in any navigable waters.

7. Within 48 hours of the completion of each barging operation, permittee shall forward by depositing in the United States mail to the Regional Administrator a report which shall be verified in accordance with the provisions of 18 U.S.C. 1001, by a responsible officer or employee of Permittee, which report shall contain as a minimum, the following:

a. The total amount of material dumped and the amounts, in parts per million and poundage, of each constituent listed in Special Condition No. 1.B. The content of the constituent shall be verified by an analysis of the material to be dumped which shall be performed prior to such dumping operation. Records of such analyses shall be included with such report.

b. A statement of the local time at which each barging operation was commenced, the latitude and longitude of the place where each barging operation was commenced, and the time and the latitude and longitude of the place where each barging operation ceased, as well as the latitude and longitude of the midpoint of the course made good if such barging operation extended over a period of six hours.

c. The time, date and point of actual departure and return for each barging operation.



d.. Fathometer records of the entire run during which barging operations or dumping operations were taking place shall be submitted.

8. Permittee shall notify by telegram the U.S. Coast Guard (local Captain of the Port) and the Regional Administrator not later than 12 hours prior to the departure from the permittee's facility of any tug or vessel which is to depart to sea for a barging operation. Included in such notification shall be:

a. A sequential numbering system, starting with number 1, for the barge trips authorized by this permit. All communications relative to each barge trip shall reflect the number designated.

b. A statement of the amount, in tons, of materials to be dumped.

c. A chemical description, as determined by chemical analysis, of the constituents listed in Special Condition No. 1.B., excepting the metals.

d. The names and registry numbers of the tug and barge scheduled for departure, and

e. The estimated time of arrival at the dump site and the estimated time of return to port and the port of return.

Such notice shall be received by the Regional Administrator 12 hours in advance of departure or at such time greater than 12 hours to allow receipt by the Regional Administrator during normal working hours. If permittee anticipates a weekend or holiday dump, he shall notify the Regional Administrator the working day prior to the weekend or holiday and a duty official will be assigned by EPA for receiving the report. In the event the metals analysis exhibits concentrations in violation of the limitations of this permit, permittee shall cause the master of the vessel to not discharge and return to port.

9. Permittee shall cause the master of the vessel to stay in radio contact with the local Captain of the Port (COTP) for all barge movements in accordance with Coast Guard surveillance requirements, and to notify the local COTP when dumping commences.

10. The permittee shall maintain complete records, which shall be available for inspection and copying by the Administrator, the Regional Administrator, or their designees, of:

a. The nature, including a complete description of relevant physical characteristics of material dumped pursuant to the permit.

b. The precise times and locations of dumping.

c. Any information relevant to the assessment of the impact of permitted dumping activities on the marine environment or human health or welfare.

11. The permittee shall, at the end of each six-month period, beginning on August 15, 1975, make a report to the Regional Administrator of the following information:

a. Information in the records to be kept pursuant to Paragraph 10 of the General Conditions,

b. A summary of the reports required by Paragraph 7 of the General Conditions,

c. Any additional records or reports required in the Special Conditions of this permit, and

d. An analysis of all elements listed in 227.31(b)(1) of the ocean dumping final regulations and criteria (40 C.F.R. 227.31), excluding those reported under Special Condition 1.B. of herein permit, from a composite sampling from each barging operation.

12. The permittee shall make an additional report in accordance with the requirements of Paragraph 11 of the General Conditions at the expiration of this permit.

13. Reports required by Paragraphs 11 and 12 of the General Conditions shall be received by the Regional Administrator within 30 days following the end of the required reporting period.

14. If the dumping of material which is regulated by this permit is dumped due to emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittee shall make a full report in accordance with the provision of 18 U.S.C. 1001, within 30 days to the Regional Administrator of the emergency and the actions taken.

15. The reporting requirements contained in this permit are in addition to any reporting requirements of any other State or Federal Agency.

16. In the event any portion of the authorized dumping or transporting is done by a person, firm or corporation other than the named permittee, any and all reports required hereunder shall

be jointly executed by both permittee and such other person, firm or corporation in accordance with the provisions of 18 U.S.C. 1001 by an officer or employee of such other person, firm or corporation.

17. The performance of any transportation or dumping authorized by this permit, by any person, firm or corporation other than the named permittee shall not relieve permittee from full responsibility for compliance herewith, nor shall the issuance of this permit to permittee relieve such other person, firm or corporation from responsibility for compliance herewith, nor shall the existence of any such contractual or other relationship between permittee and any other such person, firm or corporation operate to relieve either party from responsibility for compliance with this permit or the Act or both.

18. Terms used in this permit which are defined in Section 3 of the Act shall have the same meaning herein.

#### Special Conditions

##### 1.A.:

The digested biological sludge to be barged is described below as a typical analysis.

pH	6.0 -8.0	
specific gravity	1.01-1.05	
total suspended solids	30,000	ppm
volatile suspended solids	23,000	ppm
total organic carbon	12,000	ppm
organic chlorides	0.8	ppm
mercury	0.011	ppm
cadmium	0.020	ppm
arsenic	0.02	ppm
lead	1.4	ppm
copper	2.8	ppm
zinc	14.0	ppm
selenium	0.06	ppm
vanadium	0.20	ppm
beryllium	<0.004	ppm
chromium	94.	ppm
nickel	2.5	ppm

##### 1.B.:

In accordance with all other terms and conditions of this permit, the permittee is authorized to transport for dumping and to dump in ocean waters, material which shall not exceed in its physical and chemical characteristics the concentrations and loads listed below:

## Biological Sludge

Composition Constituents	Concentrations (wt/wt) Not to Exceed
Total Suspended Solids, Dry Basis	47,200 ppm
Volatile Suspended Solids, Dry Basis	32,700 ppm
TOC (Total waste)	16,200 ppm
TOC (liquid phase only)	TBD
<u>Metals</u>	
Chromium	180 ppm
Cadmium	
Solid Phase	0.6 ppm
Liquid Phase	3.0 ppm
Mercury	
Solid Phase	0.75 ppm
Liquid Phase	1.50 ppm

The character of the material being dumped shall not be altered in its content from the foregoing by the addition of wastewaters from sources other than those identified in the application or otherwise.

## 2. Amount of Material

a. The permittee is authorized to transport and dump material described in Special Condition No. 1 an amount not in excess of 100,000 tons under this permit.

b. The permittee is authorized to transport and dump in accordance with the following limitations:

Allowable tons per quarter 30,000

No trip shall be in excess of 3250 tons.

## 3. Transportation and Barging Activities

a. The port of departure for the dumping of the material described herein is Houston, Texas, or such other port or terminal being used for storage of the accumulated waste subject to the provisions of General Condition No. 8. The permittee is authorized to transport the material described herein from his facility to such port of departure to ocean waters.

b. During loading operations, there shall be no loss of material to any waterway.

c. The permittee is authorized to dump the prescribed wastes in an approved dumping site which is defined in longitude and latitude as follows:

- (1) 27 degrees 12 minutes north latitude
- (2) 27 degrees 28 minutes north latitude
- (3) 94 degrees 28 minutes west longitude
- (5) 94 degrees 44 minutes west longitude

d. Permittee shall navigate around, by a radius of 15 nautical miles, the reefs found at the following coordinates:

- W. Flower Garden: 27 degrees 53 minutes north latitude  
93 degrees 48 minutes west longitude
- E. Flower Garden: 27 degrees 55 minutes north latitude  
93 degrees 36 minutes west longitude

e. Permittee shall also navigate around by a radius of 5 nautical miles the reefs found at the following coordinates:

- Stetson Bank: 28 degrees 10 minutes north latitude  
94 degrees 18 minutes west longitude
- Claypile Bank: 28 degrees 20 minutes north latitude  
94 degrees 09 minutes west longitude

f. The permittee shall regulate the dumping rate so that the material described in Special Condition 1., above, shall be discharged from a barge hereinafter identified at a rate not to exceed 12,000 pounds per minute, while moving at a speed of not less than 5 knots.

g. The permittee shall discharge through an underwater dispersion nozzle.

#### 4. Means of Transportation

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Dixie Carriers, Inc.	Chem 810	1,400 tons
Dixie Carriers, Inc.	Offshore No. 2405	3,250 tons

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules:

a. Permittee shall initiate the plans necessary to provide best practicable treatment technology to the wastes herein described and shall cease dumping wastes in the ocean by a date certain, to be determined by the results of reports required by Paragraph (b) below.

b. (1) Permittee shall initiate research on alternative disposal processes for biological sludge leading toward compliance with paragraph (a) above.

Candidate disposal processes to be investigated shall be formulated from combinations of processing steps which can reduce the total amount of sludge, alter the physical or chemical properties of the sludge, and provide for ultimate disposal of the sludge.

The research should include, but is not limited to, the examination of the unit operations listed below, singly or in any combination.

- (a) extended aeration
- (b) modification of activated sludge system to produce less sludge
- (c) combining in part with primary sludge for disposal
- (d) thickening, centrifugation, filtration
- (e) fresh water leaching
- (f) landfill

- (g) incineration
- (h) destruction in a refinery coking operation
- (i) chemical solidification and subsequent land-fill.

(2) Permittee shall submit a report summarizing his research efforts on the alternate disposal processes. Such report shall include the following:

- (a) description of process options (sequence of unit operations) studied
- (b) description of mechanical equipment required for each process
- (c) material balance for each process giving values for solids, water, chromium, salts and heavy metals before and after each unit operation
- (d) capital and operating cost estimate for each process and comparison with cost of ocean dumping.

The report shall be submitted not later than November 1, 1975.

(3) Permittee shall provide for a review of the reports and studies of b(1) - b(2) by the Regional Administrator on or about August 1, 1975.

c. Permittee shall submit the required report of progress to the Regional Administrator on the date specified for the report. Where an action is required in (b) above by a certain date, a written notice of compliance or noncompliance shall be submitted within 15 days following each elapsed date. Each notice of noncompliance shall include:

- (1) a description of the noncompliance and an explanation for the noncompliance;
- (2) a description of any actions taken or proposed by the permittee to comply with the requirement; and
- (3) a date for the attainment of the requirement plus an assessment of the probability that permittee will meet the next requirement on time.

## 6. Studies

### a. Chromium Removal

Permittee shall evaluate the feasibility of separating the chromium waste stream from the biological treatment system. Cost of techniques for removal of chromium from the biological treatment system with recycling of the chromium or disposal by means other than ocean disposal shall be compared to the cost of ocean disposal.

### b. Long-term Effects

Permittee shall provide an assessment of the long-term effects of each of the alternatives studied in 5.b. above, as compared to long-term effects of ocean disposal, and submitted by December 1, 1975.

February 20, 1975  
Date

for George S. Lutnicki  
Regional Administrator  
Region VI



ENVIRONMENTAL PROTECTION AGENCY

REGION VI

1600 PATTERSON, SUITE 1100  
DALLAS, TEXAS 75201

February 12, 1974

OFFICE OF THE  
REGIONAL ADMINISTRATOR

Mr. E. S. Martin  
Plant Manager  
Shell Chemical Company  
P. O. Box 2633  
Deer Park, Texas 77536

Dear Mr. Martin:

Your application for a special permit has been the subject of a final determination by this office, subject to possible modification at a later date in accordance with the following discussion.

A permit for ocean disposal is hereby issued your facility for continued dumping of the digested sludge and spent caustic portions of your waste, such permit being numbered No. 730D008C. The fate of the organic portion of your waste has yet to be decided by this office, and consequently, the organics are not authorized under the attached permit for ocean disposal.

By letter of December 27, 1973, we requested a full description of those organics described as "dichlorobutane and heavier" and "dichloropropene and lighter". Your response of January 8, 1974 provided us with the major components but some 10-20% of the wastes are yet undefined as to their chemical nature. It is still my determination that the organics are not sufficiently described to permit evaluation at this time.

Several changes have been made to the proposed permit as discussed at the public hearing on December 14, 1974. Briefly, these changes are:

1. The expiration date has been changed to allow for a full year interim permit.
2. Seasonal regulation has been deleted,
3. The restriction to daylight dumping only has been deleted.
4. A prohibited barging zone has been placed around the Stetson and Claypile reefs described in the permit.

5. The 10-foot depth requirement for an underwater dispersion nozzle is deleted, but the requirement for underwater discharge is retained.
6. The dump rate is modified to allow 12,000 lbs/minute discharge.
7. The requirement for remotely activated pumps is deleted, but, procedurally, discharge can only take place at a speed of 5 knots or more at all times.
8. Studies have been added for long-term chronic effects of the wastes.

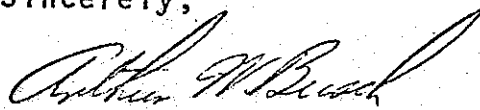
If, at any time, this permit is modified to include organics, the following may be required of wastes then barged:

- 1.(a) Bioaccumulation and biomagnification studies shall be conducted. Transfer of waste shall be measured in two simple marine food chains; seawater medium; phytoplankton; menhaden; seawater medium; phytoplankton; shrimp larvae. Several species of phytoplankton shall be employed and body burdens measured on all appropriate waste constituents.
- (b) Bioaccumulation/biomagnification in the field; phytoplankton, zooplankton and a carnivore (menhaden) should be collected within the water mass contaminated by the dumped wastes for 12 hourly intervals for at least 7 days. Body burden analysis shall be performed for all environmentally damaging contaminants dumped.
2. Biodegradation: Studies shall be conducted to determine the biodegradability of the barged waste material in the marine ecosystem. Organisms indigenous to the Gulf of Mexico shall be used in these studies, which shall be conducted both for chemical and biological information.

3

The staff of this office will be in contact with you regarding the additional organic description.

Sincerely,

A handwritten signature in cursive script, appearing to read "Arthur W. Busch".

Arthur W. Busch  
Regional Administrator

cc:  
Mr. H. Wilfong



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1600 PATTERSON, SUITE 1100  
DALLAS, TEXAS 75201

PERMIT

Permit No. 730D008C - Interim

Name of Permittee Shell Chemical Company

Effective Date February 13, 1974

Expiration Date February 13, 1975

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008C

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company,

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P.O. Box 2633

Deer Park, Texas 77536

and to dump to ocean waters, all in accordance with the following general and special conditions:

### General Conditions

1. All transportation and dumping authorized herein shall be consistent with the terms and conditions of this permit.

2. a. Transportation to, and dumping at any location other than that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

b. Transportation and dumping of any material more frequently than or in excess of that identified and authorized by this permit, or dumping of material not authorized by this permit, shall constitute a violation of the terms and conditions of this permit.

c. Permittee shall comply with each and every condition, provision and limitation in this permit and compliance with one or more but less than all conditions, provisions and limitations shall not constitute a ground or grounds of defense in any proceeding against permittee for violation of one or more of such conditions, provisions or limitations.

3. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any term or condition of this permit;

b. Misrepresentation, inaccuracy or failure by the applicant to disclose all relevant facts in the permit application.

c. A change in any condition or material fact upon which this permit is based that requires either a temporary or permanent reduction or elimination of the authorized transportation or dumping including, but not limited to, changes in conditions at the designated dumping site, and newly discovered scientific data relative to the granting of this permit.

d. A determination by the Regional Administrator that the permitted dumping has resulted, is resulting or may result in imminent and substantial harm to human health or welfare or the marine environment.

e. Failure to keep the records and/or to notify appropriate officials of dumping activities.

4. The permittee shall allow the Regional Administrator and/or the U.S. Coast Guard, and/or their authorized representatives, upon the presentation of credentials:

a. To enter into, upon, or through the permittee's premises, vessels or other premises or vessels under the control of permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit; or,

d. To sample any materials discharged or to be discharged.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private or public property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

6. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or, except as authorized by this permit, the undertaking of any work in any navigable waters.

7. Within 48 hours of the completion of each barging operation, permittee shall forward by depositing in the United States mail to the Regional Administrator a report which shall be verified in accordance with the provisions of 18 U.S.C. 1001, by a responsible officer or employee of Permittee, which report shall contain as a minimum, the following:

a. The total amount of material dumped and the amounts, in parts per million and poundage, of each constituent listed in Special Condition No. 1.B. The content of the constituent shall be verified by an analysis of the material to be dumped which shall be performed prior to such dumping operation. Records of such analyses shall be included with such report.

b. A statement of the local time at which each barging operation was commenced, the latitude and longitude of the place where each barging operation was commenced, and the time and the latitude and longitude of the place where each barging operation ceased, as well as the latitude and longitude of the mid point of the course made good if such barging operation extended over a period of six hours.

c. The time, date and point of actual departure and return for each barging operation.

d. Fathometer records of the entire run during which barging operations or dumping operations were taking place shall be submitted.

e. A negative report of a cancelled or changed dump, if, for any reason, a numbered barge trip for which notice is required by General Condition No. 8, is not made or the timing is changed.

8. Permittee shall notify by telegram the U.S. Coast Guard (local Captain of the Port) and the Regional Administrator not later than 12 hours prior to the departure from permittee's facility of any tug or vessel which is to depart to sea for a barging operation. Included in such notification shall be:

a. A sequential numbering system for the barge trips authorized by this permit. All communications relative to each barge trip shall reflect the number designated.

b. A statement of the amount, in tons, of materials to be dumped, in terms of spent caustic and sludge.

c. A chemical description, as determined by chemical analysis, of the constituents listed in Special Condition No. 1.B., excepting the metals.

d. The names and registry numbers of the tug and barge scheduled for departure, and

e. The estimated time of arrival at the dump site and the estimated time of return to port and the port of return.

Such notice shall be received by the Regional Administrator 12 hours in advance of departure or at such time greater than 12 hours to allow receipt by the Regional Administrator during normal working hours. If permittee anticipates a weekend or holiday dump, he shall notify the Regional Administrator the working day prior to the weekend or holiday and a duty official will be assigned by EPA for receiving the report. In the event the metals analysis exhibits concentrations in violation of the limitations of this permit, permittee shall cause the master of the vessel to not discharge and return to port.

9. The permittee shall maintain complete records, which shall be available for inspection and copying by the Administrator, the Regional Administrator, or their designees, of:

a. The nature, including a complete description of relevant physical characteristics of material dumped pursuant to the permit.

b. The precise times and locations of dumping.

c. Any information relevant to the assessment of the impact of permitted dumping activities on the marine environment or human health or welfare.

10. The permittee shall, at the end of each six-month period, beginning on August 15, 1974, make a report to the Regional Administrator of the following information:

a. Information in the records to be kept pursuant to Paragraph 9 of the General Conditions,

b. A summary of the reports required by Paragraph 7 of the General Conditions,

c. Any additional records or reports required in the Special Conditions of this permit, and

d. An analysis of all elements listed in 227.31(b)(1) of the ocean dumping final regulations and criteria (40 C.F.R. 227.31), excluding those reported under Special Condition 1.b. of herein permit, from a composite sampling from each barging operation.

11. The permittee shall make an additional report in accordance with the requirements of Paragraph 10 of the General Conditions at the expiration of this permit.

12. Reports required by Paragraphs 10 and 11 of the General Conditions shall be received by the Regional Administrator within 30 days following the end of the required reporting period.

13. If the dumping of material which is regulated by this permit is dumped due to emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittee shall make a full report in accordance with the provision of 18 U.S.C. 1001, within 30 days to the Regional Administrator of the emergency and the actions taken.

14. The reporting requirements contained in this permit are in addition to any reporting requirements of any other State or Federal Agency.

15. In the event any portion of the authorized dumping or transporting is done by a person, firm or corporation other than the named permittee, any and all reports required hereunder shall



be jointly executed by both permittee and such other person, firm or corporation in accordance with the provisions of 18 U.S.C. 1001 by an officer or employee of such other person, firm or corporation.

16. The performance of any transportation or dumping authorized by this permit, by any person, firm or corporation other than the named permittee shall not relieve permittee from full responsibility for compliance herewith, nor shall the issuance of this permit to permittee relieve such other person, firm or corporation from responsibility for compliance herewith, nor shall the existence of any such contractual or other relationship between permittee and any other such person, firm or corporation operate to relieve either party from responsibility for compliance with this permit or the Act or both.

17. Terms used in this permit which are defined in Section 3 of the Act shall have the same meaning herein.

Special Conditions 1.A.:

The waste to be barged is to be blended from two components, spent caustic and digested biological sludge.

The composition of the individual components is as follows:

i. Spent Caustic

Component	Avg Percent
Water	balance
Sodium Sulfide (as S)	1.02
Sodium Carbonate	1.48
Sodium Sulfite	1.01

Metals

	<u>ppm</u>
Chromium	0.13
Beryllium	<0.05
Copper	0.12
Lead	0.3
Mercury	<0.0002
Nickel	2.1
Vanadium	<1.0
Zinc	0.29
Cadmium	0.0003

## ii. Digested Biological Sludge

Component	Avg Percent
Sludge Solids	1.54
<u>Metals</u>	<u>ppm</u>
Cadmium	0.025
Beryllium	<0.02
Chromium	150.0
Copper	5.1
Lead	3.9
Mercury	0.004
Nickel	4.4
Vandium	0.62
Zinc	30

## 1.B.:

In accordance with all other terms and conditions of this permit, the permittee is authorized to transport for dumping and to dump in ocean waters, material which shall not exceed in its physical and chemical characteristics the concentrations and loads listed below:

## Biological Sludge

<u>Composition</u> <u>Constituents</u>	<u>Concentrations (wt/wt)</u> <u>Not to Exceed</u>
Total Suspended Solids, Dry Basis	91,500 ppm
Volatile Suspended Solids, Dry Basis	61,100 ppm
<u>Metals</u>	
Cadmium	0.14 ppm
Mercury	0.04 ppm
Chromium	427 ppm
<u>Physical/Chemical Properties</u>	
pH	6.0 - 8.0
TOC	TBD
Specific Gravity	1.000 - 1.050

## Spent Caustic

<u>Composition Constituents</u>	<u>Concentrations (wt/wt) Not to Exceed</u>
Total Sulfides, as Sulphur	42,400 ppm
Sodium Carbonate	49,100 ppm
Sodium Sulfite	42,400 ppm
<u>Metals</u>	
Cadmium	0.07 ppm
Mercury	0.003 ppm
<u>Physical/Chemical Properties</u>	
pH	11 - 13
Total Residue	TBD
Specific Gravity	1.05 - 1.20

The character of the material being dumped shall not be altered in its content from the foregoing by the addition of waste-waters from sources other than those identified in the application or otherwise.

## 2. Amount of Material

a. The permittee is authorized to transport and dump material described in Special Condition No. 1 an amount not in excess of 66,000 tons under this permit.

b. The permittee is authorized to transport and dump in accordance with the following limitations:

Allowable tons per quarter 16,500

Allowable tons per month 7,150

A quarter will consist of three months and the first quarter will start on January 1, 1974; February will be allocated 3,600 tons of waste.

c. No trip shall be in excess of 3250 tons.

### 3. Transportation and Barging Activities

a. The port of departure for the dumping of the material described herein is Houston, Texas, or such other port or terminal being used for storage of the accumulated waste subject to the provisions of General Condition No. 8. The permittee is authorized to transport the material described herein from his facility to such port of departure to ocean waters.

b. During loading operations, there shall be no loss of material to any waterway.

c. The permittee is authorized to dump the prescribed wastes in an approved dumping site which is defined in longitude and latitude as follows:

(1) 27 degrees 12 minutes north latitude

(2) 27 degrees 28 minutes north latitude

(3) 94 degrees 28 minutes west longitude

(4) 94 degrees 44 minutes west longitude

d. Permittee shall navigate around, by a radius of 15 nautical miles, the reefs found at the following coordinates:

W. Flower Garden: 27 degrees 53 minutes north latitude

93 degrees 48 minutes west longitude

E. Flower Garden: 27 degrees 55 minutes north latitude

93 degrees 36 minutes west longitude

e. Permittee shall also navigate around by a radius of 5 nautical miles the reefs found at the following coordinates:

Stetson Bank: 28 degrees 10 minutes north latitude

94 degrees 18 minutes west longitude

Claypile Bank: 28 degrees 20 minutes north latitude

94 degrees 09 minutes west longitude

f. The permittee shall regulate the dumping rate so that the material described in Special Condition 1., above, shall be discharged from a barge hereinafter identified at a rate not to exceed 12,000 pounds per minute, while moving at a speed of not less than 5 knots.

g. The permittee shall discharge through an underwater dispersion nozzle.

#### 4. Means of Transportation

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Dixie Carriers, Inc.	Chem 810	1,400 tons
Dixie Carriers, Inc.	Offshore No. 2405	3,250 tons

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules

a. ~~Permittee shall initiate the plans necessary to provide~~ best practicable treatment technology to the wastes herein described and shall cease dumping wastes in the ocean by July 1, 1977, in accordance with 40 C.F.R. 227.4.

b. Permittee shall achieve partial compliance with (a) above in accordance with the following schedule:

(1) Progress report and test results of plant test for treatment of spent caustic by	<u>June 1, 1974</u>
(2) Progress report on projects to reduce quantities of biosolids	<u>June 1, 1974</u>
(3) Progress report on (2) above	<u>October 1, 1974</u>
(4) Implementation plan to apply the test results of (1) by	<u>July 1, 1974</u>

c. Permittee shall submit the required report of progress to the Regional Administrator on the date specified for the report. Where an action is required in (b) above by a certain date, a written notice of compliance or noncompliance shall be submitted within 15 days following each elapsed date. Each notice of noncompliance shall include:

(1) a description of the noncompliance and an explanation for the noncompliance;

(2) a description of any actions taken or proposed by the permittee to comply with the requirement; and

(3) a date for the attainment of the requirement plus an assessment of the probability that permittee will meet the next requirement on time.

## 6. Studies

a. Additional bioassays on representative endemic species shall be initiated to determine if some long-term chronic effects occur which are not apparent in short term lethal dose bioassays. Such tests should include but not be limited to (1) subjecting the organisms to the initial dose expected in the waste stream with the dose being diluted with time to 0.01 of the 96 hr. TL<sub>m</sub>, and then holding the organisms for at least 30 days after exposure, (2) pulse-dosing organisms by periodically repeating studies outlined in (1) but with a frequency of 7 days and (3) measurement of the body burdens of as many waste constituents as possible from organisms studied in (1) and (2). Besides monitoring mortality and bioaccumulation, these bioassays should also be monitored for any impairment of behavior including locomotion, feeding and reproduction. Among other species, the larvae of brown shrimp should be used in all but the reproductive bioassays.

b. Mixed natural phytoplankton populations representative of all common seasonal populations shall be bioassayed to determine the selective potential of the waste.

c. The in situ assessment of the species abundance, distribution, and condition planktonic biota shall be determined before dumping and at short time intervals after discharge has begun within the wake of the barge. Species composition and biomass shall be determined. Plankton samplings shall be such that at least 5 samplings occur within the first hour following discharge.

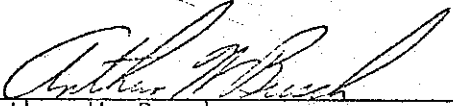
d. All methods used and reporting procedures shall be agreeable with the Regional Administrator, EPA Region VI. All of the above studies shall be completed on or before December 15, 1974.

## 7. Discharge Procedure

Permittee shall, by installation of accessory equipment or operation procedure, activate the pumps on the waste barge only after it is under way at 5 knots.

FEB 13 1974

Date

  
\_\_\_\_\_  
Arthur W. Busch  
Regional Administrator  
Region VI

ENVIRONMENTAL PROTECTION AGENCY

REGION VI

1600 PATTERSON, SUITE 1100

DALLAS, TEXAS 75201

August 3, 1973

OFFICE OF THE  
REGIONAL ADMINISTRATOR

Mr. E. S. Martin  
Plant Manager  
Shell Chemical Company  
P. O. Box 2633  
Deer Park, Texas 77536

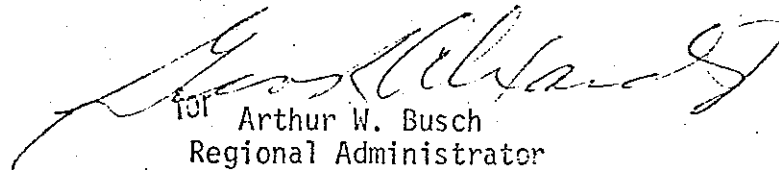
Dear Mr. Martin:

Your application for an amendment to your ocean dumping permit has been received and reviewed by this office. As a result of that review and through my authority under Public Law 92-532 and the regulations at 40 C.F.R. 220.4, I hereby issue your facility an amended permit for ocean dumping, such permit being attached hereto and numbered Permit No. 730D008B.

The attached amended permit affects only Special Condition 4(a) and authorized substitution of a barge for your dumping activities. The authorized substituted barge has a capacity of 17,000 barrels and we would remind you that Special Condition 2(b) authorizes a maximum of 8,000 barrels per trip. All other terms and conditions of the original permit remain in effect.

The amended permit also has an expiration date of November 1, 1973. In the event your company desires to continue ocean dumping beyond that date, your renewal should be submitted as soon as possible.

Sincerely yours,

  
for Arthur W. Busch  
Regional Administrator

Attachment a/s





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1600 PATTERSON, SUITE 1100  
DALLAS, TEXAS 75201

**PERMIT**

Permit No. 730D008B  
Name of Permittee Shell Chemical Company  
Effective Date August 2, 1973  
Expiration Date November 1, 1973

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008B

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company,

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P. O. Box 2633

Deer Park, Texas

and to dump to ocean waters, all in accordance with the following general and special conditions:

### General Conditions

1. All transportation and dumping authorized herein shall be consistent with the terms and conditions of this permit.

2. a. Transportation to, and dumping at any location other than that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

b. Transportation and dumping of any material more frequently than or in excess of that identified and authorized by this permit, or dumping of material not authorized by this permit, shall constitute a violation of the terms and conditions of this permit.

c. Permittee shall comply with each and every condition, provision and limitation in this permit and compliance with one or more but less than all conditions, provisions and limitations shall not constitute a ground or grounds of defense in any proceeding against permittee for violation of one or more of such conditions, provisions or limitations.

3. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any term or condition of this permit;

b. Misrepresentation, inaccuracy or failure by the applicant to disclose all relevant facts in the permit application.

c. A change in any condition or material fact upon which this permit is based that requires either a temporary or permanent reduction or elimination of the authorized transportation or dumping including, but not limited to, changes in conditions at the designated dumping site, and newly discovered scientific data relative to the granting of this permit.

d. A determination by the Regional Administrator that the permitted dumping has resulted, is resulting or may result in imminent and substantial harm to human health or welfare or the marine environment.

e. Failure to keep the records and/or to notify appropriate officials of dumping activities.

4. The permittee shall allow the Regional Administrator and/or the U. S. Coast Guard, and/or their authorized representatives, upon the presentation of credentials;

a. To enter into, upon, or through the permittee's premises, vessels or other premises or vessels under the control of permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit; or,

d. To sample any materials discharged or to be discharged.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private or public property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

6. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or, except as authorized by this permit, the undertaking of any work in any navigable waters.

7. Within 48 hours of the completion of each barging operation, permittee shall forward by depositing in the United States mail to the Regional Administrator a report which shall be verified in accordance with the provisions of 18 U.S.C. 1001, by a responsible officer or employee of Permittee, which report shall contain as a minimum, the following:

a. The total amount of material dumped from each of the three waste streams and the amounts, in percent and poundage, of each constituent thereof. The content of the constituent shall be verified by an analysis of the material dumped which shall be initiated prior to such dumping operation. Records of such analyses, when requested by the Regional Administrator, shall be included with such report.

b. A statement of the Greenwich mean time at which each barging operation was commenced, the latitude and longitude of the place where each barging operation was commenced, and the Greenwich mean time and the latitude and longitude of the place where each barging operation ceased, as well as the latitude and longitude of the mid point of the course made good if such barging operation extended over a period of six hours.

c. Fathometer records of the entire run during which barging operations or dumping operations were taking place shall be submitted.

8. Permittee shall notify by telegram the U.S. Coast Guard (local Captain of the Port) and the Regional Administrator not later than 24 hours prior to the departure from permittee's facility of any tug or vessel which is to depart to sea for a barging operation. Included in such notification shall be a statement of the amount of materials to be dumped and all constituents thereof, with verification that the material is in accordance with the terms of the permit. A chemical analysis of each waste stream and the total percent of each waste stream shall be initiated prior to each dumping operation and shall be submitted in accordance with General Condition No. 7. In addition, the permittee shall include the following:

- a. Estimated time of arrival at the dump area
- b. Estimated time to dump in the dump area
- c. Estimated time of return and the port of return
- d. Names of the barge and towing vessel.

9. The permittee shall maintain complete records, which shall be available for inspection and copying by the Administrator, the Regional Administrator, or their designees, of:

- a. The nature, including a complete description of relevant physical characteristics of material dumped pursuant to the permit.
- b. The precise times and locations of dumping.
- c. Any information relevant to the assessment of the impact of permitted dumping activities on the marine environment or human health or welfare.

10. The permittee shall, at the end of each six months period, beginning with the date of this permit, make a report to the Regional Administrator of the following information:

- a. Information in the records to be kept pursuant to Paragraph 9 of the General Conditions,
- b. A summary of the 48 hour reports required by Paragraph 7 of the General Conditions, and
- c. Any additional records or reports required in the Special Conditions of this permit.

11. The permittee shall make an additional report in accordance with the requirements of Paragraph 10 of the General Conditions at the expiration of this permit, unless renewed.

12. Reports required by Paragraphs 10 and 11 of the General Conditions shall be received by the Regional Administrator within 30 days following the end of the required reporting period.

13. If the dumping of material which is regulated by this permit is dumped due to emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittee shall make a full report in accordance with the provisions of 18 U.S.C. 1001, within 30 days to the Regional Administrator of the emergency and the actions taken.

14. The reporting requirements contained in this permit are in addition to any reporting requirements of any other State or Federal Agency.

15. In the event any portion of the authorized dumping or transporting is done by a person, firm or corporation other than the named permittee, any and all reports required hereunder shall be jointly executed by both permittee and such other person, firm or corporation in accordance with the provisions of 18 U.S.C. 1001 by an officer or employee of such other person, firm or corporation.

16. The performance of any transportation or dumping authorized by this permit, by any person, firm or corporation other than the named permittee shall not relieve permittee from full responsibility for compliance herewith, nor shall the issuance of this permit to permittee relieve such other person, firm or corporation from responsibility for compliance herewith, nor shall the existence of any such contractual or other relationship between permittee and any other such person, firm or corporation operate to relieve either party from responsibility for compliance with this permit or the Act or both.

17. Terms used in this permit which are defined in Section 3 of the Act shall have the same meaning herein.

18. The applicant shall submit, within 90 days of the effective date of this permit, to the Regional Administrator and the appropriate Captain of the Port, U. S. Coast Guard, a Spill Prevention, Containment and Countermeasure Plan for any spillage or total loss of the material while loading or transporting through the territorial sea.

Special Conditions

## 1. Description of Material

In accordance with all other terms and conditions of this permit, the permittee is authorized to transport for dumping and to dump in ocean waters, material which shall not exceed in its physical and chemical characteristics the concentrations and loads listed below:

## a. Organic Wastes (total load - 55,000 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Trichloropropane	22%
Tetrachloropropyl Ether	8%
Dichloroethane	10%
Trichloroethane	25%
Dichlorobutane	30%
Other:	5%
Dichloropropene	
Dichloropropane	
Allyl Chloride	
Dichlorohydrin	
Glycerine	
Tetrachloroethane	
Trichloroethylene	
Tetrachloroethylene	

Metals

Chromium	0.15 ppm
Lead	2.0 ppm
Nickel	0.67 ppm
Mercury	0.010 ppm
Cadmium	0.002 ppm
Zinc	0.28 ppm
Copper	1.2 ppm
Arsenic	0.03 ppm

Physical Chemical Properties

Specific Gravity	1.10-1.35
------------------	-----------

## b. Digested Sludge (Total load - 87,500 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Sludge Solids	2-10%
Extractable "Oil"	10ppm
<u>Metals</u>	
Cadmium	0.025ppm
Beryllium	<0.02 ppm
Chromium (all trivalent)	150ppm
Copper	5.1 ppm
Lead	3.9 ppm
Mercury	0.004ppm
Nickel	4.4 ppm
Vanadium	0.62ppm
Zinc	30ppm
<u>Physical Chemical Properties</u>	
Specific Gravity	1.04
pH	7.0-7.4

## c. Spent Caustic (total load - 62,500 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Sodium Carbonate	1-11%
Sodium Sulfite	2-5 %
Sulfides	0.3-2%
Extractable "Oil"	35ppm
<u>Metals</u>	
Chromium	0.13ppm
Beryllium	<0.05ppm
Copper	0.12ppm
Lead	0.3 ppm
Mercury	<0.0002ppm
Nickel	2.1 ppm
Vanadium	<1 ppm
Zinc	0.29ppm
Cadmium	0.0003ppm
<u>Physical Chemical Properties</u>	
Specific Gravity	1.05-1.150
pH	10-12

d. The character of the material being dumped shall not be altered in its content from the foregoing by the addition of wastewaters from sources other than those identified in the application or otherwise.

## 2. Amount of Material

a. The permittee is authorized to transport and dump material described in Paragraph 1 an amount not in excess of 34,200 barrels per month.  
(tons or barrels)

b. Such transportation and dumping shall not be in excess of 8,000 barrels per trip and at a frequency not to exceed 1 trip per week.  
(tons or barrels)

c. No barge load shall contain more than 27% of the organic waste material described in Special Condition 1.a. of this Permit.

## 3. Transportation and Barging Activities

a. The port of departure for the dumping of the material described herein is Houston, Texas. The permittee is authorized to transport the material described herein from his facility to such port of departure to ocean waters.

b. During loading operations, there shall be no loss of material to any waterway.

c. The permittee is authorized to dump the prescribed wastes in an approved dumping site which is defined in longitude and latitude as follows:

1. 27 degrees 28 minutes north latitude

2. 27 degrees 36 minutes north latitude

3. 94 degrees 28 minutes west longitude

4. 94 degrees 44 minutes west longitude

d. Permittee shall commence dumping operations (the actual discharge of material authorized to be dumped by this permit) no earlier than 1/2 hours after sunrise and shall cease dumping operations not later than 1/2 hours prior to sunset on any day in which dumping operations take place.



e. The permittee shall regulate the dumping rate so that the material described in Special Condition 1, above, shall be discharged from a barge hereinafter identified at a rate not to exceed 600 gallons (gallons or barrels) per minute, while moving at a speed of not less than 5 knots.

f. In any case where the wastes are containerized, the permittee shall establish and use a system of identification for each container such that at any time later such container can be identified as specific wastes from the permittee's facility.

#### 4. Means of Transportation

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Dixie Carriers, Inc.	Chem 810	8,000 barrels
Dixie Carriers, Inc.	OFFSHORE NO. 2405	17,000 barrels

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules

Permittee shall submit, within ninety (90) days of the issuance of this permit, an implementation schedule, containing an enforceable sequence of actions or operations leading to (1) the elimination of ocean dumping of all the wastes referred to in the application and (2) the treatment of such waste and disposition thereof in a manner consistent with a permit issued by the Regional Administrator pursuant to Title IV of the Federal Water Pollution Control Act Amendments of 1972. For the Organic Wastes described in the application dated April 23, 1973, and in Special Condition No. 1 herein, the permittee shall submit an implementation plan for land-based disposal, to be in operation by June 30, 1976.

## 6. Studies

a. The permittee shall immediately initiate studies to determine the effects, both short-term and long-term, of his dumping activities.

b. Such studies shall include, as a minimum, the following:

1. Bioassays of this waste and its effect on marine organisms.
2. In-situ dispersion characteristics of the waste being dumped.
3. In-situ data on the bioaccumulation of the wastes, leading to an understanding of the persistence, if any, in the food web.
4. The studies required by b.1 and b.2 above shall be submitted within 90 days of the effective date of this permit. Data required by b.3 above shall be submitted as soon as practical, but not later than 150 days from the effective date of this permit.

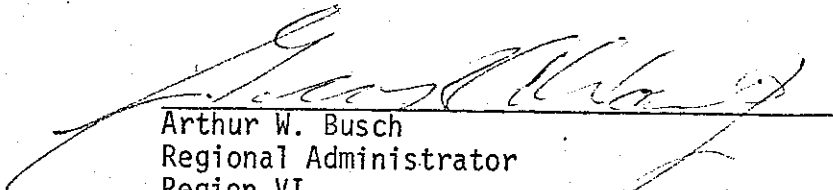
7. The applicant shall, within 60 days from the effective date of this permit, identify and analyze the sources of mercury and cadmium in the waste material. Within 120 days, the applicant shall submit an implementation plan containing an enforceable sequence of events which exhibits how the permittee will treat (or eliminate the sources of) mercury and cadmium to a concentration of 3 ppb and 1 ppb respectively.

8. The permittee shall analyze the combined wastes being barged for the properties of BOD, COD and TOC. Such analysis shall be taken on the first four (4) barge loads from the effective date of this permit and shall be submitted to the Regional Administrator by August 1, 1973.

9. In addition to any other analyses required in this permit, the permittee shall analyze the sediments beneath the dump site in such a manner as to reveal an understanding of accumulations, if any, of the waste described in Special Condition No. 1.

10. The permittee is authorized to make eight (8) barge trips, during the 30 days following the effective date of this permit, in addition to that authorized by Special Condition 2.b.

AUG 02 1973

  
Arthur W. Busch  
Regional Administrator  
Region VI



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI  
1600 PATTERSON, SUITE 1100  
DALLAS, TEXAS 75201

PERMIT

Permit No. 730D008A

Name of Permittee Shell Chemical Company

Effective Date June 13, 1973

Expiration Date November 1, 1973

MARINE PROTECTION, RESEARCH AND  
SANCTUARIES ACT (OCEAN DUMPING) PERMIT

In reference to the following application:

Application Number: 730D008A

for a permit authorizing the transportation and dumping of any material in compliance with the provisions of the Act of Congress enacted October 23, 1972, entitled The Marine Protection, Research and Sanctuaries Act of 1972, (hereinafter referred to as the Act),

Shell Chemical Company - A Division of Shell Oil Company,

hereinafter called permittee, is authorized to transport material for dumping from its facility at

P. O. Box 2633

Deer Park, Texas

and to dump to ocean waters, all in accordance with the following general and special conditions:

General Conditions

1. All transportation and dumping authorized herein shall be consistent with the terms and conditions of this permit.
2.
  - a. Transportation to, and dumping at any location other than that authorized by this permit shall constitute a violation of the terms and conditions of this permit.
  - b. Transportation and dumping of any material more frequently than or in excess of that identified and authorized by this permit, or dumping of material not authorized by this permit, shall constitute a violation of the terms and conditions of this permit.
  - c. Permittee shall comply with each and every condition, provision and limitation in this permit and compliance with one or more but less than all conditions, provisions and limitations shall not constitute a ground or grounds of defense in any proceeding against permittee for violation of one or more of such conditions, provisions or limitations.
3. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - a. Violation of any term or condition of this permit;
  - b. Misrepresentation, inaccuracy or failure by the applicant to disclose all relevant facts in the permit application.
  - c. A change in any condition or material fact upon which this permit is based that requires either a temporary or permanent reduction or elimination of the authorized transportation or dumping including, but not limited to, changes in conditions at the designated dumping site, and newly discovered scientific data relative to the granting of this permit.
  - d. A determination by the Regional Administrator that the permitted dumping has resulted, is resulting or may result in imminent and substantial harm to human health or welfare or the marine environment.
  - e. Failure to keep the records and/or to notify appropriate officials of dumping activities.
4. The permittee shall allow the Regional Administrator and/or the U. S. Coast Guard, and/or their authorized representatives, upon the presentation of credentials;

a. To enter into, upon, or through the permittee's premises, vessels or other premises or vessels under the control of permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit; or,

d. To sample any materials discharged or to be discharged.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private or public property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

6. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or, except as authorized by this permit, the undertaking of any work in any navigable waters.

7. Within 48 hours of the completion of each barging operation, permittee shall forward by depositing in the United States mail to the Regional Administrator a report which shall be verified in accordance with the provisions of 18 U.S.C. 1001, by a responsible officer or employee of Permittee, which report shall contain as a minimum, the following:

a. The total amount of material dumped from each of the three waste streams and the amounts, in percent and poundage, of each constituent thereof. The content of the constituent shall be verified by an analysis of the material dumped which shall be initiated prior to such dumping operation. Records of such analyses, when requested by the Regional Administrator, shall be included with such report.

b. A statement of the Greenwich mean time at which each barging operation was commenced, the latitude and longitude of the place where each barging operation was commenced, and the Greenwich mean time and the latitude and longitude of the place where each barging operation ceased, as well as the latitude and longitude of the mid point of the course made good if such barging operation extended over a period of six hours.

c. Fathometer records of the entire run during which barging operations or dumping operations were taking place shall be submitted.

8. Permittee shall notify by telegram the U.S. Coast Guard (local Captain of the Port) and the Regional Administrator not later than 24 hours prior to the departure from permittee's facility of any tug or vessel which is to depart to sea for a barging operation. Included in such notification shall be a statement of the amount of materials to be dumped and all constituents thereof, with verification that the material is in accordance with the terms of the permit. A chemical analysis of each waste stream and the total percent of each waste stream shall be initiated prior to each dumping operation and shall be submitted in accordance with General Condition No. 7. In addition, the permittee shall include the following:

- a. Estimated time of arrival at the dump area
- b. Estimated time to dump in the dump area
- c. Estimated time of return and the port of return
- d. Names of the barge and towing vessel.

9. The permittee shall maintain complete records, which shall be available for inspection and copying by the Administrator, the Regional Administrator, or their designees, of:

- a. The nature, including a complete description of relevant physical characteristics of material dumped pursuant to the permit.
- b. The precise times and locations of dumping.
- c. Any information relevant to the assessment of the impact of permitted dumping activities on the marine environment or human health or welfare.

10. The permittee shall, at the end of each six months period, beginning with the date of this permit, make a report to the Regional Administrator of the following information:

- a. Information in the records to be kept pursuant to Paragraph 9 of the General Conditions,
- b. A summary of the 48 hour reports required by Paragraph 7 of the General Conditions, and
- c. Any additional records or reports required in the Special Conditions of this permit.

11. The permittee shall make an additional report in accordance with the requirements of Paragraph 10 of the General Conditions at the expiration of this permit, unless renewed.

12. Reports required by Paragraphs 10 and 11 of the General Conditions shall be received by the Regional Administrator within 30 days following the end of the required reporting period.

13. If the dumping of material which is regulated by this permit is dumped due to emergency to safeguard life at sea in locations or in a manner not in accordance with the terms of this permit, the permittee shall make a full report in accordance with the provisions of 18 U.S.C. 1001, within 30 days to the Regional Administrator of the emergency and the actions taken.

14. The reporting requirements contained in this permit are in addition to any reporting requirements of any other State or Federal Agency.

15. In the event any portion of the authorized dumping or transporting is done by a person, firm or corporation other than the named permittee, any and all reports required hereunder shall be jointly executed by both permittee and such other person, firm or corporation in accordance with the provisions of 18 U.S.C. 1001 by an officer or employee of such other person, firm or corporation.

16. The performance of any transportation or dumping authorized by this permit, by any person, firm or corporation other than the named permittee shall not relieve permittee from full responsibility for compliance herewith, nor shall the issuance of this permit to permittee relieve such other person, firm or corporation from responsibility for compliance herewith, nor shall the existence of any such contractual or other relationship between permittee and any other such person, firm or corporation operate to relieve either party from responsibility for compliance with this permit or the Act or both.

17. Terms used in this permit which are defined in Section 3 of the Act shall have the same meaning herein.

18. The applicant shall submit, within 90 days of the effective date of this permit, to the Regional Administrator and the appropriate Captain of the Port, U. S. Coast Guard, a Spill Prevention, Containment and Countermeasure Plan for any spillage or total loss of the material while loading or transporting through the territorial sea.

Special Conditions

## 1. Description of Material

In accordance with all other terms and conditions of this permit, the permittee is authorized to transport for dumping and to dump in ocean waters, material which shall not exceed in its physical and chemical characteristics the concentrations and loads listed below:

## a. Organic Wastes (total load - 55,000 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Trichloropropane	22%
Tetrachloropropyl Ether	8%
Dichloroethane	10%
Trichloroethane	25%
Dichlorobutane	30%
Other:	5%
Dichloropropene	
Dichloropropane	
Allyl Chloride	
Dichlorohydrin	
Glycerine	
Tetrachloroethane	
Trichloroethylene	
Tetrachloroethylene	

Metals

Chromium	0.15 ppm
Lead	2.0 ppm
Nickel	0.67 ppm
Mercury	0.010 ppm
Cadmium	0.002 ppm
Zinc	0.28 ppm
Copper	1.2 ppm
Arsenic	0.03 ppm

Physical Chemical Properties

Specific Gravity	1.10-1.35
------------------	-----------



## b. Digested Sludge (Total load - 87,500 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Sludge Solids	2-10%
Extractable "Oil"	10ppm
<u>Metals</u>	
Cadmium	0.025ppm
Beryllium	<0.02 ppm
Chromium (all trivalent)	150ppm
Copper	5.1 ppm
Lead	3.9 ppm
Mercury	0.004ppm
Nickel	4.4 ppm
Vanadium	0.62ppm
Zinc	30ppm
<u>Physical Chemical Properties</u>	
Specific Gravity	1.04
pH	7.0-7.4

## c. Spent Caustic (total load - 62,500 barrels)

<u>Composition Constituents</u>	<u>Average (wt/wt)</u>
Sodium Carbonate	1-11%
Sodium Sulfite	2-5 %
Sulfides	0.3-2%
Extractable "Oil"	35ppm
<u>Metals</u>	
Chromium	0.13ppm
Beryllium	<0.05ppm
Copper	0.12ppm
Lead	0.3 ppm
Mercury	<0.0002ppm
Nickel	2.1 ppm
Vanadium	<1 ppm
Zinc	0.29ppm
Cadmium	0.0003ppm
<u>Physical Chemical Properties</u>	
Specific Gravity	1.05-1.150
pH	10-12

d. The character of the material being dumped shall not be altered in its content from the foregoing by the addition of wastewaters from sources other than those identified in the application or otherwise.

## 2. Amount of Material

a. The permittee is authorized to transport and dump material described in Paragraph 1 an amount not in excess of 34,200 barrels per month. (tons or barrels)

b. Such transportation and dumping shall not be in excess of 8,000 barrels per trip and at a frequency not to exceed 1 (tons or barrels) trip per week.

c. No barge load shall contain more than 27% of the organic waste material described in Special Condition 1.a. of this Permit.

## 3. Transportation and Barging Activities

a. The port of departure for the dumping of the material described herein is Houston, Texas. The permittee is authorized to transport the material described herein from his facility to such port of departure to ocean waters.

b. During loading operations, there shall be no loss of material to any waterway.

c. The permittee is authorized to dump the prescribed wastes in an approved dumping site which is defined in longitude and latitude as follows:

1. 27 degrees 28 minutes north latitude
2. 27 degrees 36 minutes north latitude
3. 94 degrees 28 minutes west longitude
4. 94 degrees 44 minutes west longitude

d. Permittee shall commence dumping operations (the actual discharge of material authorized to be dumped by this permit) no earlier than 1/2 hours after sunrise and shall cease dumping operations not later than 1/2 hours prior to sunset on any day in which dumping operations take place.

e. The permittee shall regulate the dumping rate so that the material described in Special Condition 1, above, shall be discharged from a barge hereinafter identified at a rate not to exceed 600 gallons \_\_\_\_\_ per minute, while moving at a speed of not less than (gallons or barrels) \_\_\_\_\_ knots.

f. In any case where the wastes are containerized, the permittee shall establish and use a system of identification for each container such that at any time later such container can be identified as specific wastes from the permittee's facility.

#### 4. Means of Transportation

a. The means of transportation shall be one of the following named vessels:

<u>Company</u>	<u>Barge</u>	<u>Capacity</u>
Dixie Carriers, Inc.	Chem 810	8,000 barrels
Dixie Carriers, Inc.	OFFSHORE NO. 1402	10,000 barrels

b. The permittee shall place this permit or a copy of this permit in a conspicuous place in the vessel which will be used for the transportation or dumping herein authorized.

#### 5. Implementation Schedules

Permittee shall submit, within ninety (90) days of the issuance of this permit, an implementation schedule, containing an enforceable sequence of actions or operations leading to (1) the elimination of ocean dumping of all the wastes referred to in the application and (2) the treatment of such waste and disposition thereof in a manner consistent with a permit issued by the Regional Administrator pursuant to Title IV of the Federal Water Pollution Control Act Amendments of 1972. For the Organic Wastes described in the application dated April 23, 1973, and in Special Condition No. 1 herein, the permittee shall submit an implementation plan for land-based disposal, to be in operation by June 30, 1976.

## 6. Studies

a. The permittee shall immediately initiate studies to determine the effects, both short-term and long-term, of his dumping activities.

b. Such studies shall include, as a minimum, the following:

1. Bioassays of this waste and its effect on marine organisms.
2. In-situ dispersion characteristics of the waste being dumped.
3. In-situ data on the bioaccumulation of the wastes, leading to an understanding of the persistence, if any, in the food web.
4. The studies required by b.1 and b.2 above shall be submitted within 90 days of the effective date of this permit. Data required by b.3 above shall be submitted as soon as practical, but not later than 150 days from the effective date of this permit.

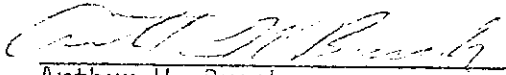
7. The applicant shall, within 60 days from the effective date of this permit, identify and analyze the sources of mercury and cadmium in the waste material. Within 120 days, the applicant shall submit an implementation plan containing an enforceable sequence of events which exhibits how the permittee will treat (or eliminate the sources of) mercury and cadmium to a concentration of 3 ppb and 1 ppb respectively.

8. The permittee shall analyze the combined wastes being barged for the properties of BOD, COD and TOC. Such analysis shall be taken on the first four (4) barge loads from the effective date of this permit and shall be submitted to the Regional Administrator by August 1, 1973.

9. In addition to any other analyses required in this permit, the permittee shall analyze the sediments beneath the dump site in such a manner as to reveal an understanding of accumulations, if any, of the waste described in Special Condition No. 1.

10. The permittee is authorized to make eight (8) barge trips, during the 30 days following the effective date of this permit, in addition to that authorized by Special Condition 2.b.

June 13, 1973  
Date

  
Arthur W. Busch  
Regional Administrator  
Region VI